



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,810	04/16/2004	Yonggang Jin	27-012	8695

22898 7590 03/23/2007
ISHIMARU & ZAHRT LLP
333 W. EL CAMINO REAL
SUITE 330
SUNNYVALE, CA 94087

EXAMINER

JOHNSON, JONATHAN J

ART UNIT	PAPER NUMBER
----------	--------------

1725

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/825,810

Applicant(s)

JIN ET AL.

Examiner

Jonathan Johnson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☒ Claim(s) 16, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 12-9-06

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 16 and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (USPN 5516031).

Nishikawa teaches a system for soldering a part comprising a conveyor for moving the part, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input lock chamber (10) and an output lock chamber (12) and a vacuum reflow chamber. The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus (figure 1, col 5 line 59 – col 6 line 30, col 7 lines 13-18 and col 10 lines 21-24). In addition, the conveyor system is capable of moving horizontally (horizontal motion); vertically

Art Unit: 1725

(vertical motion at the end of the conveyor) and combination thereof (near the end between the horizontal and vertical motion).

3. Claims 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Pekol (USPN 5573174).

Pekol teaches a system for soldering a part comprising a conveyor, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input lock chamber and an output lock chamber and a vacuum reflow chamber. The vacuum employs pumps (col 7 lines 40-58). The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus (figures 1 and 6, col 3 lines 14-40, col 4 lines 10-18, col 4 line 40 – col 5 line 62). In addition, the conveyor system is capable of moving horizontally (horizontal motion); vertically (vertical motion at the end of the conveyor) and combination thereof (near the end between the horizontal and vertical motion).

4. Claims 16, and 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuki et al. (USPN 6732911 B2).

Matsuki teaches a system for soldering a part comprising a conveyor, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input and output lock

Art Unit: 1725

chambers (225) and a vacuum reflow chamber. The vacuum employs pumps. The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus (abstract. figures 1 and 34A, col 2 lines 35-42 and col 29 line 17 – col 30 line 29). In addition, the conveyor system is capable of moving horizontally (horizontal motion); vertically (vertical motion at the end of the conveyor) and combination thereof (near the end between the horizontal and vertical motion).

Response to Arguments

5. Applicant's arguments with respect to the have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claims 1-10 are allowed.

Art Unit: 1725

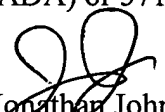
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177.

The examiner can normally be reached on M-Th 7:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jonathan Johnson
Primary Examiner
Art Unit 1725